

SEQUENCE LISTING

SEQ ID NO:1

5'ACTCACTATAGGGCTCGAGCGGCCGCCGGGCAGGTGGGGCTCCGCGGGCCTGGA
GCACGGCCGGGTCTAATATGCCCCGAGCCGAGGCGCGATGAAGGAGAAGTCCAAGA
ATGCGGCCAAGACCAGGAGGGAGAAGGAAAATGGCGAGTTTACGAGCTTGCCAAG
CTGCTCCCGCTGCCGTCGGCCATCACTTCGCAGCTGGACAAAGCGTCCATCATCCGC
CTCACCACGAGCTACCTGAAGATGCGCGCCGTCTTCCCCGAAGGTTTAGGAGACGCG
TGGGGACAGCCGAGCCGCGCCGGGCCCTGGACGGCGTCGCCAAGGAGCTGGGATC
GCACTTGCTGCAGACTTTGGATGGATTTGTTTTTGTGGTAGCATCTGATGGCAAAATC
ATGTATATATCCGAGACCGCTTCTGTCCATTTAGGCTTATCCCAGGTGGAGCTCACG
GGCAACAGTATTTATGAATACATCCATCCTTCTGACCACGATGAGATGACCGCTGTC
CTCACGGCCCACCAGCCGCTGCACCACCACCTGCTCCAAGAGTATGAGATAGAGAG
GTCGTTCTTTCTTCGAATGAAATGTGTCTTGGCGAAAAGGAACGCGGGCCTGACCTG
CAGCGGATACAAGGTCATCCACTGCAGTGGCTACTTGAAGATCAGGCAGTATATGCT
GGACATGTCCCTGTACGACTCCTGCTACCAGATTGTGGGGCTGGTGGCCGTGGGCC
AGTCGCTGCCACCCAGTGCCATCACCGAGATCAAGCTGTACAGTAACATGTTTCATGT
TCAGGGCCAGCCTTGACCTGAAGCTGATATTCCTGGATTCCAGGGTGACCGAGGTGA
CGGGTTACGAGCCGCAGGACCTGATCGAGAAGACCCTATACCATCACGTGCACGGC
TGCGACGTGTTCCACCTCCGCTACGCACACCACCTCCTGTTGGTGAAGGGCCAGGTC
ACCACCAAGTACTACCGGCTGCTGTCCAAGCGGGGCGGCTGGGTGTGGGTGCAGAG
CTACGCCACCGTGGTGCACAACAGCCGCTCGTCCCGGCCCCACTGCATCGTGAGTGT
CAATTATGTACTACGGAGATTGAATACAAGGAACCTCAGCTGTCCCTGGAGCAGGT
GTCCACTGCCAAGTCCCAGGACTCCTGGAGGACCGCCTTGTCTACCTCACAAGAAAC
TAGGAAATTAGTGAAACCCAAAAATACCAAGATGAAGACAAAGCTGAGAACAAAC
CCTTACCCCCCACAGCAATACAGCTCGTTCCAAATGGACAAACTGGAATGCGGCCA
GCTCGGAAACTGGAGAGCCAGTCCCCCTGCAAGCGCTGCTGCTCCTCCAGAACTGCA
GCCCCACTCAGAAAGCAGTGACCTTCTGTACACGCCATCCTACAGCCTGCCCTTCTC
CTACCATTACGGACACTTCCCTCTGGACTCTCACGTCTTCAGCAGCAAAAAGCCAAT
GTTGCCGGCCAAGTTCGGGCAGCCCCAAGGATCCCCTTGTGAGGTGGCACGCTTTTT
CCTGAGCACACTGCCAGCCAGCGGTGAATGCCAGTGGCATTATGCCAACCCCCTAGT
GCCTAGCAGCTCGTCTCCAGCTAAAAATCCTCCAGAGCCACCGGCGAACACTGCTAG
GCACAGCCTGGTGCCAAGCTACGAAGCGCCCCGCCGCCGCGTGCAGGTTTCGGCG
AGGACACCGCGCCCCCGAGCTTCCCGAGCTGCGGCCACTACCGCGAGGAGCCCCGCG
CTGGGCCCCGGCCAAAGCCGCCCGCCAGGCCGCCGGGACGGGGCGCGGCTGGCGCT
GGCCCCGCGCGGCACCCGAGTGCTGCGCGCCCCCGACCCCCGAGGCCCCGGGCGCGC
CGGCGCAGCTGCCCTTCGTGCTGCTCAACTACCACCGCGTGCTGGCCCCGGCGCGGAC
CGCTGGGGGGCGCCGCACCCGCCGCCTCCGGCCTGGCCTGCGCTCCCGGCGGCCCC
GAGGCGGCGACCGGCGCGCTGCGGCTCCGGCACCCGAGCCCCGCGGCCACCTCCCC
GCCCCGCGCGCCCCCTGCCGCACTACCTGGGCGCCTCGGTTCATCATCACCAACGGGA
GGTGACCCGCTGGCCGCCCCGCGCCAGGAGCCTGGACCCGGCCTCCCGGGGCTGCGG
CGCCACCGAGCCCCGGCAAATGCGCACGACCTACATTAATTTATGCAGAGACAGCTG
TTTGAATTGGACCCCGCCGCGGACTTGCGGATTTCCACCGCGGAGGCCCCGCGCGCC
GGTGCCGAGGGCCGAGGAGCGCCCGGTCCGGGCAGGTGACCGCCCGCCTCTGTCC
TGCGAGGGCCGGTGCGACCCAGTTGCTGGGGGCTTGGTTTCCTCACCTTGAAATCGG
GCTTCACGCGTCTTGCTTGTCCCCAACGTTCCACAACAGTCCCGCTGGGGGATTGA
AGCGGTTTCACTCCGCAAATATCCTCCACTTTCAGGAGGGGAAAACCCACCCTACCAC
AGTCCGCTCTTCCAAGTGGACGGCAGACCTGGGAGGGGACGCCTGTGTACGAGCC
CTTTTAGATGCTTAGGTGAAGGCAGAAGTGATGATTGTAAGTCCCATGAATACACAA
CTCCACTGTCTTTAAAAGTCATTCAAGAGTCTCATTATTTTTTGTTTTTTATTTAACCTT
TCTTCAATACAAAAAGCCAACAAACCAAGACTAAGGGGGTGACCATGCAATTCCAT
TTTGTGTCTGTGAACATAGGTGTGCTTCCCAAATACATTAACAAGCTCTTACTTCCCC

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CTAACCCCTATGAACTCTTGATAACACCAAGAGTAGCACCTTCAGAATATATTGAAT
 AGGCATTAAATGCAAAAATATATATGTAGCCAGACAGTTTATGAGAATGACCCTGTC
 AAGCTTCATTATTACGTGGCAAAATCCCTCTGGCCACACAGATCTGTAATTCATA
 GGCTCGTGTGCTACAAATAGTGCTAATAAAGTTAAATTGCACGTGCAATACGGAA
 CACTGTCAATGGACTGCACCTTGTGAAGGAAAAACATGCTTAAGGGGGTGTAAATGA
 AAATGATGTAGACATTTTAAGCATTTTCTACACAGCGAGAAAACTTCGTAAGAACAT
 GTTACGTGTGCAACAGGTAAACAGAAATCCTTTCATAAAGCACCAGCAGTGTTTAAA
 AAATGAGCTTCCATTAATTTTTACTTTTTATGGGTTTTGCTTAAAGATCTCAACATGG
 AAAAATCCTGTCATGGCTCTGAACTGCACAATGCATTGAACCGCCGTCCTTCA
 ATTTTCTTCACACTATCAACACTGCAGCATTTTGCTGCTTTATCAAAAATGGTTTATTT
 TAGGAACTTTTTCCACCTTTCTGAATGGAAAGAGGTTTTACAAAATGTTTTAAACTC
 ATCGTTCTAAAATCAAGTGCACCTACACCAACTGCTCTCAAAAATGTGAACTGACTTT
 TTTTTTTTTTTTTTGGCAACCCTGTGTCACTTAGTGAGGACCTGACACAATCCCTAC
 AGGGTGTCTGTGTCAGTGGGCCTCATGGTAAGAGTCACAATTTGCAAAATTAGGACCGT
 GGGTCATGCAGCGAAGGGGCTGGATGGTAGGAAGGGATGTGCCCCGCTCTCCACGC
 ACTCAGCTATACCTCATTACAGCTCCTTGTGAGTGTGTGCACAGGAAATAAGCCGA
 GGGTATTATTTTTTATGTTTCATGAGTCTTGTAATTAAACCGTGATTCTTGAAAGGTG
 TAGGTTTGATTACTAGGAGATACCACCGACATTTTCAATAAAGTACTGCAAAATGC
 TTTTGTGTCTACCTTGTATTAACTTTTGGGGCTGTATTTAGTAAAAATAAATCAAGG
 CTATCGGAGCAGTTCAATAACAAAGGTTACTGTTGAGAAAAAAGACCCTATCATAG
 ATTTACAA 3'

SEQ ID NO:2

5'ACTCACTATAGGGCTCGAGCGGCCGCCCCGGGCAGGTGGGGCTCCGCGGGCCTGGA
 GCACGGCCGGGTCTAATATGCCCGGAGCCGAGGCGCGATGAAGGAGAAGTCCAAGA
 ATGCGGCCAAGACCAGGAGGGGAGAAGGAAAATGGCGAGTTTTACGAGCTTGCCAAG
 CTGCTCCCCGCTGCCGTCGGCCATCACTTCGCAGCTGGACAAAGCGTCCATCATCCGC
 CTCACCACGAGCTACCTGAAGATGCGCGCCGCTTCCCCGAAGGTTTAGGAGACGCG
 TGGGGACAGCCGAGCCGCGCCGGGCCCTGGACGGCGTCGCCAAGGAGCTGGGATC
 GCACTTGCTGCAGACTTTGGATGGATTTGTTTTTGTGGTAGCATCTGATGGCAAAATC
 ATGTATATATCCGAGACCGCTTCTGTCCATTTAGGCTTATCCCAGGTGGAGCTCACG
 GGCAACAGTATTTATGAATACATCCATCCTTCTGACCACGATGAGATGACCGCTGTC
 CTCACGGCCCCACCAGCCGCTGCACCACCACCTGCTCCAAGAGTATGAGATAGAGAG
 GTCGTTCTTTCTTCGAATGAAATGTGTCTTGGCGAAAAGGAACGCGGGCCTGACCTG
 CAGCGGATACAAGGTCATCCACTGCAGTGGCTACTTGAAGATCAGGCAGTATATGCT
 GGACATGTCCCTGTACGACTCCTGCTACCAGATTGTGGGGCTGGTGGCCGTGGGCCA
 GTCGCTGCCACCCAGTGCCATCACCGAGATCAAGCTGTACAGTAACATGTTTCATGTT
 CAGGGCCAGCCTTGACCTGAAGCTGATATTCCTGGATTCCAGGGTGACCGAGGTGAC
 GGGTTACGAGCCGCGAGGACCTGATCGAGAAGACCCTATACCATCACGTGCACGGCT
 GCGACGTGTTCCACCTCCGCTACGCACACCACCTCCTGTTGGTGAAGGGCCAGGTCA
 CCACCAAGTACTACCGGCTGCTGTCCAAGCGGGGCGGCTGGGTGTGGGTGCAGAGC
 TACGCCACCGTGGTGCACAACAGCCGCTCGTCCCGGCCCACTGCATCGTGAGTGTC
 AATTATGTACTCACGGAGATTGAATACAAGGAACTTCAGCTGTCCCTGGAGCAGGTG
 TCCACTGCCAAGTCCCAGGACTCCTGGAGGACCGCCTTGTCTACCTCACAAGAACT
 AGGAAATTAGTGAAACCCAAAAATACCAAGATGAAGACAAAGCTGAGAACAAACC
 CTTACCCCCCACAGCAATACAGCTCATTCCAAATGGACAACTGGAATGCGGCCAG
 CTCGGAAACTGGAGAGCCAGTCCCCCTGCAAGCGCTGCTGCTCCTCCAGAAGTGCAG
 CCCCCTCAGAAAGCAGTGACCTTCTGTACACGCCATCCTACAGCCTGCCCTTCTCC
 TACCATTATGGACACTTCCCTCTGGACTCTCACTTCTTCAGCAGCAAAAAGCCAATG
 TTGCCGGCCAAGTTCGGGCAGCCCCAAGGATCCCCCTTGTGAGGTGGCACGCTTTTTT
 CTGAGCACAATGCCAGCCAGCGGTGAATGCCAGTGGCATTATGCCAACCCCTAGT

GCCTAGCAGCTCGTCTCCAGCTAAAAATCCTCCAGAGCCACCGGCGAACACTGCTAG
GCACAGCCTGGTGCCAAGCTACGAAGGTGGGTCAGGTCTGCTCGTGGGGAAGGTGG
GAGGACTGCGCACGGCCGGGAGCCGAAGCAGCCATGGCGGTGGGTGGCAGATGGAG
ACAGAACCCTCACGCTTTGGGCAAACCTTGCCCTCTTTCTGCTTCTAAGTAGGGCTTGCTGTG
CTTTCTTGCTCTCAATGCAGGTGCTCCTCGAGAGTGAGAAAATGGCAGTCTGCCTGCC
TCGGGGGACACTAGTGACAGTATAAAGGGCAAAGGAAAACCGAGTATCTGGCCTTCA
CGTAAATCCTGGCCACATTCACCAACCAAAGGGGGACAGTGATTTTCAAAACCAGC
TCCCATGTGCTGAGAACACCCCAGCTGCATTTCTTTTGCAAGATTCCTTTCCACTCCA
ACCAGAAGTGAATATTTGAGACAAACGGCCTATTGGCTATTTTCCCATGCCAGTTTT
GGAAGTGGGGGAAACTATGGTGGAATTTGTGGGCTTGGGGACAGAAAATGCCACTC
ACCAACCCAGGGCAAAGAACACAAACCCCTCCAGGCCTCAGTTTCTTCACCTGTAAA
ATGGGGTGAAGCTGTGATGTGCCTACTCCCAAGGACACGACACACAGTAGGGACCT
GCCCTGTACATGCTAGTTCAACAGAAAGGAATGGCCTTTCACCTTCTCCTGGTGGCA
GGCAAGCAGATGTCTCTGCGGAGATACCGCCAGCTCCCCAGGACGCAGACTGACT
CCTGTTTGCTCGCTGGACCAACCCCAGGCAGAAGGTGGAAGGTGGGAACAGAGGTT
TAGCTGCAGGACATGTATTCCCATTCACCGAGACCTAACTGCCGCTCAGAGTGTAG
ACCGAGATGGTGCAGATGCCTGCAGTGCCATTAAAATGTGGGTGAAGGTGACATCA
GGATTATGTGCCCCAGGCCGGGCTCAGTGGCTCACACCTGTAATCCCAGCACTTTGG
GAGGCCAAGGTGGGCGGATCACCTGAGGTGAGGAGTTTGCAGCAAGCCTGCCAACA
AGCTGAAACCCCATCTCCACTAAAAATACAAAAATTAGTTGGGCATGGTGGTGAGC
ACCTGTAATCCCAGCTACTCTGGAGGCTGAGATAGGAGGATCACTTGAACCCGGGA
GGTGGAGGTTGCAGTGAGCTAAGATCACATCACTGCACTCCAGCCTGGGTAAACAGA
GTGAGACTGTCTCAAAAAAAAAAAAAAAAAA 3'

SEQ ID NO:3- SIM2 long-form Amino Acid Sequence

MKEKSKNAAKTRREKENGEFYELAKLLPLPSAITSQLDKASIIRLTTSYLKMRAVFPEGL
GDAWGQPSRAGPLDGVAKELGSHLLQTLDFVVFVVASDGKIMYISETASVHLGLSQVEL
TGNSIY EYIHPSDHDEMTAVLTAHQPLHHLLQEYEIERSFFLRMKCVLAKRNAGLTCSG
YKVIHCSGYLKIRQYMLDMSLYDSCYQIVGLVAVGQSLPPSAITEIKLYSNMFMFRASLD
LKLIFLDSRVTEVTGYEPQDLIEKTLYHHVHGCDVFHLRYAHHLLLVKGQVTTKYRLL
SKRGGWVWVQSYATVVHNSRSSRPCHIVSVNYVLTEIEYKELQLSLEQVSTAKSQDSW
RTALSTSQETRKLVKPKNTKMKTKLRTPNPYPQQYSSFQMDKLECGQLGNWRASPPAS
AAAPPELQPHSESSDLLYTPSYSLPFSYHYGHFPLDSHFSSKKPMLPAKFGQPQGSPCEV
ARFFLSTLPASGECQWHYANPLVPSSSSPAKNPPEPPANTARHSLVPSYEAPAAAVRRFG
EDTAPPSFPSCGHYREEPALGPAKAARQAARDGARLALARAPECCAPPTPEAPGAPAQ
LPFVLLNYHRVLARRGPLGGAAPAASGLACAPGGPEAATGALRLRHPSAATSPPGAPLP
HYLGASVIITNGR

SEQ ID NO:4- SIM2 short-form Amino Acid Sequence

MKEKSKNAAKTRREKENGEFYELAKLLPLPSAITSQLDKASIIRLTTSYLKMRAVFPEGLGDA
WGQPSRAGPLDGVAKELGSHLLQTLDFVVFVVASDGKIMYISETASVHLGLSQVELTGNSIY
EYIHPSDHDEMTAVLTAHQPLHHLLQEYEIERSFFLRMKCVLAKRNAGLTCSGYKVIHCSG
YLKIRQYMLDMSLYDSCYQIVGLVAVGQSLPPSAITEIKLYSNMFMFRASLDLKLIFLDSRV
TEVTGYEPQDLIEKTLYHHVHGCDVFHLRYAHHLLLVKGQVTTKYRLLSKRGGWVWVQSY
ATVVHNSRSSRPCHIVSVNYVLTEIEYKELQLSLEQVSTAKSQDSWRTALSTSQETRKLVKPK
NTKMKTKLRTPNPYPQQYSSFQMDKLECGQLGNWRASPPASAAAPPELQPHSESSDLLYTPS
YSLPFSYHYGHFPLDSHFSSKKPMLPAKFGQPQG
SPCEVARFFLSTMPASGECQWHYANPLVPSSSSPAKNPPEPPANTARHSLVPSYEGGSGL
LVGKVGGLRTAGSRSSHGGGWQMETEPSRFGQTCPLSASK

SEQ ID NO:5- UniGene, Hs. # 146186

5'-GGAATATTCGAAACCCCGAGCTTTTACAACATAAAGCGCATGGTGTGGCCGCGG
CGGGTAATGGCGCTCTGGGAGCCCTGCCCAGGCGGCCTCTGCTCGCCCTCCTCCACT
TCCAGCTCCGAGCTGGGTGTGTTGCAAGTTTCATACTCCTACATATTATAAGTGACA
CTAATATCAGGGACAACCTAAGTGCTGGGGAACCTCAATGAAAACCTGGCTGGTAAA
GTCAACACCCCCAGACTTCTCTGTGCTACATTTCTTTAATTAATTCCGGAGTGGTGTG
TGGACGGGCGTCTTTGCAGTTATTATACACGTAAGTGAATTAGGCCATTTGAAGCTA
CGAAGTCATACCCAACATTTTCCATTAAGAATATTATTTTTTTAGCTACTGCTGGCAA
CTTTTAGAATTTAATTATGATAATTTTCCTCTTTTCCTCATTATCCCAGATATGGCTGG
TTGTGAGATACTTTTCACTANATGTGTCTTTTAAATGATTTTGGAATTAAGCAAGTA
TGCCAAATGCGCCAAGACATTTATAACTNTAGAAATTGCTGTATAGTATATAT -3'

SEQ ID NO: 6- 1001 bp extended contig

5' -GGAATATTCGAAACCCCGAGCTTTTACAACATAAAGCGCATGGTGTGGCCGCGG
CGGGTAATGGCGCTCTGGGAGCCCTGCCCAGGCGGCCTCTGCTCGCCCTCCTCCACT
TCCAGCTCCGAGCTGGGTGTGTTGCAAGTTTCATACTCCTACATATTATAAGTGACA
CTAATATCAGGGACAACCTAAGTGCTGGGGAACCTCAATGAAAACCTGGCTGGTAAA
GTCAACACCCCCAGACTTCTCTGTGCTACATTTCTTTAATTAATTCCGGAGTGGTGTG
TGGACGGGCGTCTTTGCAGTTATTATACACGTAAGTGAATTAGGCCATTTGAAGCTA
CGAAGTCATACCCAACATTTTCCATTAAGAATATTATTTTTTTAGCTACTGCTGGCAA
CTTTTAGAATTTAATTATGATAATTTTCCTCTTTTCCTCATTATCCCAGATATGGCTGG
TTGTGAGATACTTTTCACTAAATGTGTCTTTTAAATGATTTTGGAATTAAGCAAGTA
TGCCAAATGCGCCAAGACATTTATAACTTTAGAAATTGCTGTATAGTATATATTTTTG
GAACACCACAGGTTTAGTTGGGAAAATATTTTGCAGCTGAGTTAGAACTTGAAAGT
TAGGCTTATAATCAAGATGCTGATTTTCAACCTTAGCATCGGGGAAGGTAATGATAG
TTAGTTGGCAAAGACTTTTGCAGCAAACCTGTATTTGAGACAGCAGAATCCAAGGA
TATCTTTCAAGATTCACCTTATACTACATTCCTTTTAGCCCCCTCTCTAGGGGTGGAGG
GGGTGGCTTAGAAAAACCAAAGGTAATCTGGTTTCAATTACATGCTGTAAAAATAG
AATTTGTGGCCAGAAATTAATTTGGAATATTTTTTATGGGGGCAACATTGTGGGTTG
TATGAGTCTTTCACCAACTTTATTGCTTTTCTTTGGTTCTGGATCTAAAATATGAATG
AGTAAATAAAATACAGTTTCCTTTTCAA -3'

SEQ ID NO:7

5' TGGAGGACCGCCTTGTCTACCT 3'

SEQ ID NO: 8

5' CCGGTGGCTCTGGAGGATTT 3'

SEQ ID NO:9

5' ACCTTCTGTACACGCCATCC 3'

SEQ ID NO:10 (472 bp amplified product is underlined)

5'TGGAGGACCGCCTTGTCTACCTCACAAGAACTAGGAAATTAGTGAAACCCAAAA
ATACCAAGATGAAGACAAAGCTGAGAACAAACCCTTACCCCCCACAGCAATACAGC
TCGTTCCAAATGGACAAACTGGAATGCGGCCAGCTCGGAAACTGGAGAGCCAGTCC
CCCTGCAAGCGCTGCTGCTCCTCCAGAACTGCAGCCCCACTCAGAAAGCAGTGACCT
TCTGTACACGCCATCCTACAGCCTGCCCTTCTCCTACCATTACGGACACTTCCCTCTG
GACTCTCACGTCTTCAGCAGCAAAAAGCCAATGTTGCCGGCCAAGTTCGGGCAGCCC
CAAGGATCCCCTTGTGAGGTGGCACGCTTTTTCCTGAGCACACTGCCAGCCAGCGGT
GAATGCCAGTGGCATTATGCCAACCCCCTAGTGCCTAGCAGCTCGTCTCCAGCTAAA
AATCCTCCAGAGCCACCGG 3'

SEQ ID:11

5' ATT CTT GGA CTT CTC CTT CAT CGC 3'

SEQ ID:12

5' GAG AGC AAG AAA GCA CAG CAA GCC 3'

SEQ ID:13

5' CCG AAC GAC ACG AAA GAA CGA GAG 3'

SEQ ID NO:14: Peptide used to raise polyclonal antibody

5' SHGGGWQMETEPSRF 3'

SEQ ID NO:15: Sense RT- PCR primers for SIM2 short-form

5' TGG AGG ACC GCC TTG TCT ACC T 3'

SEQ ID NO: 16: Antisense RT-PCR primers for SIM2 short-form

5' GCC CAA AGC GTG AGG GTT CTG TCT 3'